CLAIMS

1. Use of an interferon β (IFNB) polypeptide variant comprising an amino acid sequence which differs from the amino acid sequence of wild-type human IFNB (SEQ ID NO:2) in that at least one glycosylation site has been introduced, for the manufacture of a medicament for the treatment of stroke or cerebrovascular accident (CVA) in a primate.

2. Use according to claim 1, wherein said stroke is ischemic stroke.

3. Use according to claim 2, wherein said ischemic stroke is selected from the group consisting of embolic stroke, cardioembolic stroke, thrombotic stroke, large vessel thrombosis, lacunar infarction, artery-artery stroke and cryptogenic stroke.

4. Use according to claim 1, wherein said stroke is hemorrhagic stroke.

5. Use according to claim 4, wherein said hemorrhagic stroke is selected from the group consisting of intraparenchymal stroke, subdural stroke, epidural stroke and subarachnoid stroke.

6. Use of an interferon β (IFNB) polypeptide variant comprising an amino acid sequence which differs from the amino acid sequence of wild-type human IFNB (SEQ ID NO:2) in that at least one glycosylation site has been introduced, for the manufacture of a medicament for the treatment of transient ischemic attack in a primate.

7. Use according to any of claims 1-6, wherein said primate is a human.

8. Use according to any of claims 1-7, wherein said glycosylation site is an *in vivo* N-glycosylation site.

9. Use according to claim 8, wherein the IFNB variant is asialo-glycosylated.

10. Use according to any of claims 1-9, wherein the amino acid sequence of said variant differs from the amino acid sequence of wild-type human IFNB (SEQ ID NO:2) in 1-15 amino acid residues.

11. Use according to any of claims 1-10, wherein said at least one glycosylation site is introduced by a substitution selected from the group consisting of S2N+N4T/S, L9N+R11T/S, R11N, S12N+N14T/S, F15N+C17S/T, Q16N+Q18T/S, K19N+L21T/S, Q23N+H25T/S, G26N+L28T/S, R27N+E29T/S, L28N+Y30T/S, D39T/S, K45N+L47T/S, Q46N+Q48T/S, Q48N+F50T/S, Q49N+Q51T/S, Q51N+E53T/S, R71N+D73T/S, Q72N, D73N, S75N, S76N+G78T/S, L88T/S, Y92T/S, N93N+I95T/S, L98T/S, E103N+K105T/S, E104N+L106T/S, E107N+E109T/S, K108N+D110T/S, D110N, F111N+R113T/S and L116N.

12. Use according to claim 11, wherein said substitutions are selected from the group consisting of S2N+N4T, L9N+R11T, Q49N+Q51T, R71N+D73T and F111N+R113T.

13. Use according to claim 12, wherein said substitutions are selected from the group consisting of 4Q9N+Q51T, R71N+D73T and F111N+R113T.

14. Use according to claim 13, wherein said substitutions are selected from the group consisting of Q49N+Q51T and F111N+R113T.

15. Use according to any of claims 11-14, wherein said variant comprises substitutions selected from the group consisting of
Q49N+Q51T+F111N+R113T,
Q49N+Q51T+R71N+D73T+ F111N+ R113T,
S2N+N4T+F111N+R113T,
S2N+N4T+Q49N+Q51T,
S2N+N4T+Q49N+Q51T+F111N+R113T,
S2N+N4T+L9N+R11T+Q49N+Q51T,
S2N+N4T+L9N+R11T+F111N+R113T,
S2N+N4T+L9N+R11T+Q49N+Q51T+F111N+R113T,
L9N+R11T+Q49N+Q51T,
L9N+R11T+Q49N+Q51T+F111N+R113T and
L9N+R11T+F111N+R113T.

16. Use according to claim 15, wherein said variant comprises the substitutions Q49N+Q51T+F111N+R113T.

17. Use according to any of claims 1-16, wherein the cysteine residue located at position 17 in human wild-type IFNB (SEQ ID NO:2) has been removed.

18. Use according to claim 17, wherein said cysteine residue has been removed by the substitution C17S.

19. Use according to claim 18, wherein said variant comprises substitutions selected from the group consisting of
C17S+Q49N+Q51T,
C17S+F111N+R113T,
C17S+Q49N+Q51T+F111N+R113T,
C17S+Q49N+Q51T+R71N+D73T+ F111N+R113T,
S2N+N4T+C17S+F111N+R113T,
S2N+N4T+C17S+Q49N+Q51T,
S2N+N4T+C17S+Q49N+Q51T+F111N+R113T,
S2N+N4T+L9N+R11T+C17S+Q49N+Q51T,
S2N+N4T+L9N+R11T+C17S+F111N+R113T,
S2N+N4T+L9N+R11T+C17S+Q49N+Q51T+F111N+R113T,
L9N+R11T+C17S+Q49N+Q51T,
L9N+R11T+C17S+Q49N+Q51T+F111N+R113T and
L9N+R11T+C17S+F111N+R113T.

20. Use according to claim 19, wherein said variant comprises the substitutions C17S+Q49N+Q51T+F111N+R113T.

21. Use according to any of claims 1-20, wherein said variant comprises a substitution in position 110.

22. Use according to claim 21, wherein said substitution is selected from the group consisting of D110F, D110V, D110W and D110Y.

23. Use according to claim 22, wherein said substitution is D110F.

24. Use according to claim 23, wherein said variant comprises substitutions selected from the group consisting of
C17S+D110F+F111N+R113T,
C17S+Q49N+Q51T+D110F+F111N+R113T,
C17S+Q49N+Q51T+R71N+D73T+D110F+F111N+R113T,
S2N+N4T+C17S+D110F+F111N+R113T,
S2N+N4T+C17S+Q49N+Q51T+D110F+F111N+R113T,
S2N+N4T+L9N+R11T+C17S+D110F+F111N+R113T,
S2N+N4T+L9N+R11T+C17S+Q49N+Q51T+D110F+F111N+R113T,
L9N+R11T+C17S+Q49N+Q51T+D110F+F111N+R113T and
L9N+R11T+C17S+D110F+F111N+R113T.

25. Use according to claim 24, wherein said variant comprises the substitutions
C17S+Q49N+Q51T+D110F+F111N+R113T.

26. Use according to claim 25, wherein said variant has the amino acid sequence shown in SEQ ID NO:3.

27. Use according to any of claims 1-26, wherein a polymer molecule is covalently attached to an amino acid residue of the variant, said amino acid residue comprising an attachment group for the polymer molecule.

28. Use according to claim 27, wherein said polymer is a PEG molecule.

29. Use according to claim 27 or 28, wherein said attachment group is the ε-amino group of a lysine residue or the N-terminal amino group.

30. Use according to any of claims 27-29, wherein at least one lysine residue has been removed.

31. Use according to claim 30, wherein said lysine residue is selected from the group consisting of K19, K33, K45, K52, K99, K105, K108, K115, K123, K134 and K136.

32. Use according to claim 31, wherein said lysine residue is selected from the group consisting of K19, K33, K45 and K123.

33. Use according to any of claims 30-32, wherein said lysine residue has been removed by substituting said lysine residue with an arginine or glutamine residue.

34. Use according to claim 33, wherein said substitution(s) is (are) selected from the group consisting of K19R, K33R, K45R, K123R, K19R+K33R, K19R+K45R, K19R+K123R, K33R+K45R, K33R+K123R, K45R+K123R, K19R+K45R+K123R, K19R+K33R+K123R, K19R+K33R+K45R, K33R+K45R+K123R and K19R+K33R+K45R+K123R.

35. Use according to claim 34, wherein said substitutions are selected from the group consisting of K19R+K45R+K123R, K19R+K33R+K123R, K19R+K33R+K45R and K33R+K45R+K123R.

36. Use according to claim 35, wherein said substitutions are selected from the group consisting of K19R+K33R+K45R.

37. Use according to claim 36, wherein said variant comprises substitutions selected from the group consisting of
C17S+Q49N+Q51T+K19R+K33R+K45R,
C17S+D110F+F111N+R113T+K19R+K33R+K45R,
C17S+Q49N+Q51T+D110F+F111N+R113T+K19R+K33R+K45R,
C17S+Q49N+Q51T+R71N+D73T+D110F+F111N+ R113T+K19R+K33R+K45R,
S2N+N4T+C17S+D110F+F111N+R113T+K19R+K33R+K45R,
S2N+N4T+C17S+Q49N+Q51T+D110F+F111N+R113T+K19R+K33R+K45R,
S2N+N4T+L9N+R11T+C17S+D110F+F111N+R113T+K19R+K33R+K45R,
S2N+N4T+L9N+R11T+C17S+Q49N+Q51T+D110F+F111N+R113T+K19R+K33R+K45R,
L9N+R11T+C17S+Q49N+Q51T+D110F+F111N+R113T+K19R+K33R+K45R and
L9N+R11T+C17S+D110F+F111N+R113T+K19R+K33R+K45R.

38. Use according to claim 37, wherein said variant comprises the substitutions C17S+Q49N+Q51T+D110F+F111N+R113T+K19R+K33R+K45R.

39. A method for treating or preventing stroke or cerebrovascular accident (CVA) in a primate, the method comprising administering an effective amount of an interferon β (IFNB) polypeptide variant comprising an amino acid sequence which differs from the amino acid sequence of wild-type human IFNB (SEQ ID NO:2) in that at least one glycosylation site has been introduced, to a primate in need thereof.

40. The method according to claim 39, wherein said stroke is ischemic stroke.

41. The method according to claim 40, wherein said ischemic stroke is selected from the group consisting of embolic stroke, cardioembolic stroke, thrombotic stroke, large vessel thrombosis, lacunar infarction, artery-artery stroke and cryptogenic stroke.

42. The method according to claim 39, wherein said stroke is hemorrhagic stroke.

43. The method according to claim 42, wherein said hemorrhagic stroke is selected from the group consisting of intraparenchymal stroke, subdural stroke, epidural stroke and subarachnoid stroke.

44. A method for treating or preventing transient ischemic attack in a primate, the method comprising administering an effective amount of an interferon β (IFNB) polypeptide variant comprising an amino acid sequence which differs from the amino acid sequence of wild-type human IFNB (SEQ ID NO:2) in that at least one glycosylation site has been introduced, to a primate in need thereof.

45. The method according to any of claims 39-44, wherein said primate is a human.

46. The method according to any of claims 39-45, wherein said IFNB variant is as defined in any of claims 8-38.